

A dry gray-scale image processor can be made small and light, and the work area and space required by the processor can be used more efficiently. The dry gray-scale image processor extracts unexposed films one by one and carries them to an exposure unit, radiates a laser beam comprising an image data signal onto the film as it passes said exposure unit, and develops the exposed film by heating at a heating unit. The interval between an exposure position of the exposure unit and a heat start position of the heating unit is shorter than the length of the film in the delivery direction, and the processes of exposure and heating can be performed in parallel simultaneously.